

Environmental Taxes: Superfund and Hazardous Waste, 1981-83

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Through 1983, \$678 million in environmental taxes was reported for funds established under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). The largest share of these taxes, \$676 million, was amassed since April 1981 for the Hazardous Substance Response Trust Fund, more commonly known as the "Superfund." The remaining \$1.7 million, generated by the Hazardous Waste Tax, was reported for the newly imposed Post-closure Liability Trust Fund.

The "Superfund" relies on a "front-end tax," an excise tax levied on crude oil, imported petroleum products, 11 petrochemicals and 31 inorganic chemicals from which other hazardous substances and wastes are generated. This fund is used to clean up chemical spills and abandoned hazardous waste disposal sites.

The Post-closure Liability Trust Fund relies on the Hazardous Waste Tax, which took effect on October 1, 1983. This fund assumes the liability of the owner or operator of a closed hazardous waste disposal facility, if the owner or operator complied with specific governmental regulations.

The Hazardous Waste Tax is a "waste-end tax" imposed on the receipt of hazardous waste at a "qualified" hazardous waste disposal facility. The tax applies to any hazardous waste which will remain at the qualified hazardous waste disposal facility after the facility is closed and will be in effect until the unobligated balance of the Post-closure Liability Trust Fund exceeds \$200 million. Seventy-four filers reported liability for the new Hazardous Waste Tax in the one quarter that the tax has been in effect, with the average tax per business being approximately \$23,000.

Through 1983, nearly 56 percent of the "Superfund" tax liability, \$379 million, was reported by 15 companies, or 2 percent of the 876 companies reporting a liability. Of that amount, these top 15 companies reported nearly \$49 million in tax for petroleum, and \$330 million in tax for all chemicals.

The 78 companies reporting a "Superfund" tax of at least \$1 million accounted for \$615 million, or more than 90 percent of the total liability. These companies, representing almost 9 percent of all companies with a "Superfund" tax, had an average liability of \$8 million.

Looking at the entire population of "Superfund" tax filers, two-thirds of the taxes or nearly \$449 million was levied on petrochemical products. The remainder was divided between inorganic chemical products and petroleum products, with \$117 million and \$107 million, respectively. In addition, \$3.3 million was reported as unallocable chemical tax liability.

As shown in the following table, of the substances taxed during the full life of "Superfund," petrochemicals, while reported by the fewest number of businesses, only 229, accounted for the highest average tax liability, nearly \$2.0 million per business. Inorganic chemicals were reported by 399 businesses and generated \$293,000 in tax per business, on the average. A tax on petroleum products was reported by 395 businesses. It generated about \$271,000 in tax per business over the 11-quarter period the tax was in effect.

Number of Businesses and Amount of
Environmental Taxes for Quarters Ending
June 30, 1981 through December 31, 1983

[Money amounts are in thousands of dollars]

Type of tax	Number of businesses	Total tax	Average tax
Total Environmental Tax	913	\$678,025	\$743
"Superfund"	876	676,314	772
Petroleum	395	107,183	271
Petrochemicals ...	229	448,804	1,960
Inorganics	399	116,991	293
Unallocable	94	3,333	35
Post-closure Liability Trust Fund	74	1,714	23

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As business activity declined with the recession of 1981-82, the liability for "Superfund" declined. As shown in the following table, the tax liability for the last three quarters of 1983, was still approximately 5 percent below the tax liability reported in 1981. However, tax liability for 1983 increased by approximately 9 percent or \$20 million over the liability for 1982, a reflection of the turnaround occurring in the economy over that time.

The quarter ended September 1983 showed an increase in every category for the first time since the quarter ended June 1982. Total liability for September 1983 was \$64.0 million, up by almost \$10 million over the September 1982 figures. For the quarter ended December 1983, the tax liability increased by more than \$10 million over the December 1982 figure.

"Superfund" Taxes by Category for
Quarters Ending June 30, 1981,
through December 31, 1983

[Millions of dollars]

Quarter ending	Total	Petrochemicals	Inorganic chemicals	Petroleum
Total ¹	\$676.0	\$448.8	\$117.0	\$107.2
June 1981	69.4	46.0	13.2	10.2
Sept. 1981	60.9	40.0	11.6	9.3
Dec. 1981	68.0	43.8	11.3	11.5
Mar. 1982	59.0	39.3	10.5	9.0
June 1982	60.6	40.1	10.7	9.8
Sept. 1982	54.6	35.7	8.9	9.4
Dec. 1982	55.4	36.4	9.6	9.2
Mar. 1983	59.5	40.0	10.6	8.7
June 1983	59.2	40.1	9.5	9.4
Sept. 1983	64.0	42.0	10.8	11.1
Dec. 1983	65.7	45.2	10.3	9.7

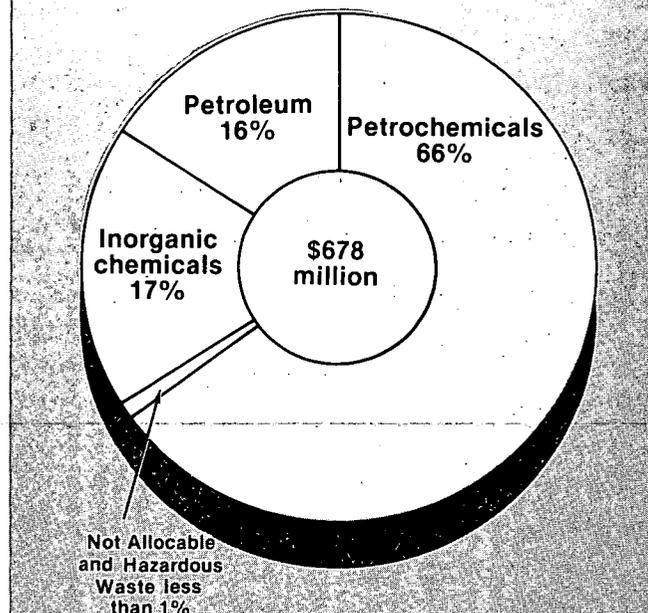
¹ Includes liability for taxes not allocable to a specific category. For this reason and also because of rounding, detail will not add to total.

PETROCHEMICALS

As shown in Figure A, since its inception in 1981, the tax on petrochemicals was reported by approximately 229 of the 876 businesses reporting "Superfund" taxes. Although just over 26 percent of the businesses reported the tax on petrochemicals, it generated 66 percent of the total tax liability. The petrochemical reported most commonly; toluene, was reported by nearly 38 percent of the businesses with a tax on petrochemicals. However, less than 7 percent of the tax on petrochemicals was generated from this source. In contrast, while the tax on ethylene was reported by less than 20 percent of businesses reporting tax on petrochemicals,

it accounted for almost 40 percent of the liability for petrochemicals. According to Table 2, the businesses reporting tax on ethylene, on the average, reported \$4.1 million in tax liability for that substance alone.

Figure A
Sources of Environmental Taxes,
Quarters Ending June 30, 1981, through
December 31, 1983



INORGANIC CHEMICALS

Tax on inorganic chemicals was reported by 46 percent of the businesses reporting "Superfund" taxes. However, as shown in Figure A, the liability was only 17 percent of the "Superfund" taxes. Sulfuric acid, ammonia, and hydrochloric acid, reported by 27 percent, 22 percent and 22 percent, respectively, of the companies reporting a tax liability for inorganic chemicals, were the most commonly taxed of these substances. These chemicals represented only 26 percent of the liability reported for inorganic chemicals. On the other hand, chlorine, reported by only 13 percent of the businesses reporting tax on inorganic chemicals, accounted for approximately 53 percent of the reported liability for this group.

Returns are sometimes filed reporting a total tax on chemicals, without specifying type of chemicals. Eight percent of the returns filed could not be categorized by the type of chemical for which they were filed. However, tax reported on these returns represented less than 1 percent of the total tax liability.

PETROLEUM

Petroleum and petroleum products were reported by 45 percent of the total businesses reporting "Superfund" liability. But, as shown in Figure A, the total tax on petroleum represented only 16 percent of the total liability.

REQUIREMENTS FOR REPORTING TAXES

The requirements for filing and reporting a tax on petroleum apply to the following:

- 1) operators of U.S. refineries receiving crude oil;
- 2) importers of petroleum products for consumption, use, or warehousing; and
- 3) users or exporters of crude oil on which the environmental tax has not been paid.

Since the tax is imposed only once on a product, once it has been paid it cannot be imposed again on another business that would otherwise be liable.

The requirements for filing and reporting the tax on chemicals apply to any importer, manufacturer, or producer that sells or uses any of the 42 taxable chemicals listed in Table 1. There are some exceptions to what is taxed, with the following being nontaxable:

- 1) ammonia, if used directly as a fertilizer;
- 2) methane or butane used as a fuel (however, the business using the chemical for a taxable purpose is liable);
- 3) nitric acid, sulfuric acid, ammonia, or methane used in the production of ammonia that is used for fertilizer;
- 4) sulfuric acid produced solely as a by-product of, and on the same site as, air pollution control equipment; and
- 5) any substance derived from coal.

SUMMARY

Through 1983, \$676 million in tax liability was generated for the "Superfund." Of the 876 companies reporting, the 78 with a tax liability of \$1 million or more accounted for over 90 percent of the total liability. Two-thirds of the "Superfund" tax liability was levied on petrochemical products. Petrochemicals, while reported by the fewest number of businesses, accounted for the highest average tax liability (\$2.0 million per business).

The new Hazardous Waste Tax, which funds the Post-closure Liability Trust Fund, went into

effect on October 1, 1983. For the one quarter it was in effect, \$1.7 million in tax liability was generated.

DATA SOURCES AND LIMITATIONS

The Quarterly Excise Tax Return, Form 720, is the form on which environmental taxes are reported. Form 6627, Environmental Taxes, is the supporting schedule on which the tax liability for petroleum, chemicals and hazardous waste is computed. The tax as imposed by Congress is levied at different rates ranging from \$.0079 per barrel of crude oil or petroleum to as much as \$4.87 per ton of certain chemicals. The average tax levied is \$3.24 per medium.

Returns are due for filing one month after the end of the quarter in which the business is liable for environmental taxes. These returns are the chief source of data for this study. Data in this article reflect information reported on returns filed for the tax quarters ending June 30, 1981 through December 31, 1983.

Any adjustments, credits, or refunds to environmental taxes either on the Form 720 or Form 843, Claim, are not reflected in the data. A taxpayer can take an adjustment or credit if a taxed chemical is later used to manufacture or produce any other substance subject to the tax. If a tax is paid on a chemical subsequently used to produce fertilizer, a credit or adjustment can also be claimed.

The Internal Revenue Service also releases environmental tax statistics in a report on excise taxes that is issued quarterly [1]. These figures, taken from the Form 720, show the total liability, after adjustments, of returns recorded on the computerized Business Master File as part of routine tax administration processing. There is, however, no distribution of tax by type of chemical. Returns are due one month after the end of the calendar quarter. Also included are returns filed late because of routine filing extensions and other reasons. Therefore, that report covers what was recorded during a quarter, regardless of when the liability was incurred. Consequently, the two series of data are not directly comparable.

Since no statistical sampling was involved, the data are not subject to sampling error, but may be subject to nonsampling error. Attempts were made to secure all returns filed. In addition, the returns were passed through a series of validity checks to verify the accuracy and completeness of the returns. For those returns supplying a total with no distribution by category, the amount was included in the statistics under "unallocable chemicals."

NOTES AND REFERENCES

- [1] U.S. Department of the Treasury, Internal Revenue Service, Internal Revenue Report of Excise Taxes.
- [2] See also Barnhardt, Janet, "Superfund for Environmental Taxes," Statistics of Income Bulletin, Fall 1982, pp. 31-34.
- [3] See also Belal, Rashida, "Superfund for Environmental Taxes, 1981 and 1982," Statistics of Income Bulletin, Fall 1983, pp. 31-34.

Table 1.--Environmental Taxes Reported by Type of Substance, Quarters Ended June 30, 1981 - December 31, 1983

[Money amounts are in thousands of dollars]

Type of substance	Total to date	Quarter ended				
		June 1981	Sept. 1981	Dec. 1981	March 1982	June 1982
	(1)	(2)	(3)	(4)	(5)	(6)
Petroleum.....	107,182	10,186	9,293	11,542	8,958	9,750
Petrochemicals, total.....	448,804	45,966	40,010	43,834	39,317	40,105
Acetylene.....	1,648	206	235	188	120	135
Benzene.....	55,468	5,322	4,225	5,265	4,558	4,543
Butane.....	9,559	1,248	1,088	1,050	1,020	1,218
Butylene.....	11,299	1,334	1,247	1,442	926	1,212
Butadiene.....	18,104	1,832	1,483	2,015	1,454	1,685
Ethylene.....	177,527	17,024	15,229	15,969	15,293	15,881
Methane.....	20,989	2,625	2,264	2,309	2,031	2,004
Naphthalene.....	913	139	65	93	99	53
Propylene.....	80,846	9,569	7,965	7,661	7,994	6,889
Toluene.....	30,064	2,564	2,354	2,686	1,973	2,143
Xylene.....	42,388	4,103	3,883	5,157	3,849	4,343
Inorganics, total.....	116,991	13,158	11,561	11,341	10,509	10,721
Ammonia.....	21,938	2,336	2,138	2,191	2,118	2,059
Antimony.....	27	4	2	2	2	2
Antimony trioxide.....	190	13	17	24	20	16
Arsenic.....	11	1	- ¹	1	1	1
Arsenic trioxide.....	172	21	23	23	22	19
Barium sulfide.....	20	*	*	3	*	*
Bromine.....	2,046	205	156	206	*	143
Cadmium.....	26	3	2	3	3	2
Chlorine.....	62,396	7,352	6,186	5,791	5,540	5,682
Chromium.....	233	76	36	25	27	10
Chromite.....	1,213	114	182	247	80	81
Potassium dichromate.....	- ¹	*	*	*	*	- ¹
Sodium dichromate.....	55	*	17	*	2	1
Cobalt.....	68	3	4	11	8	6
Cupric sulphate.....	159	10	17	11	11	11
Cupric oxide.....	60	4	3	4	7	4
Cuprous oxide.....	39	3	4	4	4	4
Hydrochloric acid.....	1,477	90	116	211	148	140
Hydrogen flouride.....	2,924	328	337	238	259	274
Lead oxide.....	3,432	366	244	393	330	267
Mercury.....	23	2	2	2	2	6
Nickel.....	1,420	120	157	156	163	124
Phosphorus.....	4,500	494	423	420	409	407
Stannous chloride.....	11	*	*	2	1	1
Stannic chloride.....	45	1	- ¹	11	4	5
Zinc chloride.....	142	15	13	15	12	15
Zinc sulfate.....	144	18	13	15	16	16
Potassium hydroxide.....	196	15	13	16	12	14
Sodium hydroxide.....	6,553	744	657	650	602	599
Sulfuric acid.....	6,568	704	700	593	567	745
Nitric acid.....	905	101	93	74	68	67
Unallocable chemicals.....	3,332	67	28	1,318	221	10
Hazardous waste.....	1,714	- ²				

Environmental Taxes, 1981-83

Table 1.--Environmental Taxes Reported by Type of Substance, Quarters Ended June 30, 1981 - December 31, 1983 - Continued

[Money amounts are in thousands of dollars]

Type of substance	Quarter ended - Continued					
	Sept. 1982	Dec. 1982	March 1983	June 1983	Sept. 1983	Dec. 1983
	(7)	(8)	(9)	(10)	(11)	(12)
Petroleum.....	9,351	9,165	8,689	9,407	11,144	9,672
Petrochemicals, total.....	35,724	36,416	40,042	40,099	42,077	45,213
Acetylene.....	112	*	*	*	132	*
Benzene.....	5,097	4,283	4,870	5,455	5,168	6,681
Butane.....	831	728	721	522	704	428
Butylene.....	733	945	925	1,047	680	809
Butadiene.....	1,413	1,324	1,742	1,664	1,658	1,833
Ethylene.....	15,120	16,431	16,769	14,438	17,935	17,438
Methane.....	1,621	1,508	1,633	1,645	1,609	1,742
Naphthalene.....	88	*	*	*	*	*
Propylene.....	6,129	5,263	7,045	7,035	7,450	7,874
Toluene.....	2,003	2,139	2,675	4,623	3,148	3,755
Xylene.....	2,577	3,612	3,470	3,466	3,525	4,403
Inorganics, total.....	8,878	9,619	10,601	9,478	10,834	10,292
Ammonia.....	1,924	1,552	1,901	1,959	2,021	1,739
Antimony.....	2	1	4	3	3	3
Antimony trioxide.....	12	13 ₁	17 ₁	18 ₁	17	22
Arsenic.....	1	1	1	1	4	3
Arsenic trioxide.....	13	12	10	15	5	8
Barium sulfide.....	*	*	*	2	1	1
Bromine.....	179	388	182	132	186	200
Cadmium.....	2	2	4	3	2	1
Chlorine.....	4,396	5,313	5,713	4,733	6,071	5,619
Chromium.....	8	7	11	13	10	10
Chromite.....	50 ₁	118 ₁	108 ₁	77 ₁	59 ₁	96 ₁
Potassium dichromate.....	1	1	1	1	1	1
Sodium dichromate.....	*	1	2	2	12	3
Cobalt.....	3	5	9	8	7	4
Cupric sulphate.....	25	10	20	14	17	11
Cupric oxide.....	6	4	7	7	7	7
Cuprous oxide.....	3	*	4	5	4	4
Hydrochloric acid.....	113	126	152	115	132	133
Hydrogen flouride.....	220	204	255	280	261	270
Lead oxide.....	319	205 ₁	288 ₁	271	338	410
Mercury.....	4	1	1	1	2	2
Nickel.....	62	96	152	155	74	160
Phosphorus.....	384	380	404	428	336	414
Stannous chloride.....	1	*	2	1	*	1
Stannic chloride.....	4	3	5	5	1	6
Zinc chloride.....	10	11	16	14	10	12
Zinc sulfate.....	10	3	20	13	10	10
Potassium hydroxide.....	5	12	68	12	13	15
Sodium hydroxide.....	470	493	578	518	648	595
Sulfuric acid.....	565	583	580	582	504	444
Nitric acid.....	86	74	87	91	79	86
Unallocable chemicals.....	600	154	204	235	- ¹	496
Hazardous waste.....	- ²	- ²	- ²	- ²	- ²	1,714

*This figure is not shown to avoid disclosure of information for specific businesses. However, the data are included in the appropriate totals.

¹Less than \$1,000, however, the data are included in the appropriate totals.

²Tax not in effect until October 1, 1983.

NOTE: Detail may not add to total because of rounding.

Table 2.--Environmental Taxes Reported by Type of Substance, Aggregate For The Quarters Ended June 30, 1981, - December 31, 1983

Type of substance	Number of businesses	Number of tons (000's)	Tax rate per ton (dollars)	Average tax per business (dollars)
	(1)	(2)	(3)	(4)
Petroleum.....	395	13,567,431 ¹	0.0079 ²	271,348
Petrochemicals, total.....	229 ³	93,947	N/A	1,959,844
Acetylene.....	49	338	4.87	33,637
Benzene.....	65	11,390	4.87	853,351
Butane.....	33	1,963	4.87	289,652
Butylene.....	23	2,320	4.87	491,245
Butadiene.....	31	3,717	4.87	584,004
Ethylene.....	43	36,453	4.87	4,128,542
Methane.....	32	6,102	3.44	655,915
Naphthalene.....	6	187	4.87	152,119
Propylene.....	54	16,601	4.87	1,497,145
Toluene.....	87	6,173	4.87	345,560
Xylene.....	72	8,704	4.87	588,725
Inorganics, total.....	399	94,446	N/A	293,210
Ammonia.....	90	8,310	2.64	243,761
Antimony.....	19	6	4.45	1,440
Antimony Trioxide.....	27	51	3.75	7,027
Arsenic.....	15	3	4.45	762
Arsenic trioxide.....	20	50	3.41	8,596
Barium sulfide.....	4	9	2.30	4,988
Bromine.....	9	460	4.45	227,315
Cadmium.....	24	6	4.45	1,071
Chlorine.....	50	23,109	2.70	1,247,912
Chromium.....	19	52	4.45	12,283
Chromite.....	19	798	1.52	63,847
Potassium dichromate.....	6	- ⁴	1.69	27
Sodium dichromate.....	12	30	1.87	4,611
Cobalt.....	27	15	4.45	2,520
Cupric sulphate.....	30	85	1.87	5,287
Cupric oxide.....	15	17	3.59	3,990
Cuprous oxide.....	5	10	3.97	7,784
Hydrochloric acid.....	88	5,091	0.29	16,779
Hydrogen flouride.....	17	691	4.23	171,972
Lead oxide.....	38	829	4.14	90,309
Mercury.....	11	5	4.45	2,029
Nickel.....	28	319	4.45	50,703
Phosphorus.....	12	1,011	4.45	374,997
Stannous chloride.....	6	4	2.85	1,898
Stannic chloride.....	8	21	2.12	5,595
Zinc chloride.....	22	64	2.22	6,475
Zinc sulfate.....	26	76	1.90	5,529
Potassium hydroxide.....	22	890	0.22	8,907
Sodium hydroxide.....	77	23,404	0.28	85,104
Sulfuric acid.....	107	25,261	0.26	61,382
Nitric acid.....	39	3,769	0.24	23,195
Unallocable chemicals.....	94	N.A.	N.A.	35,453
Hazardous waste.....	74	805	2.13	23,169

N/A - Not applicable.

¹Number of barrels.²Rate per barrel.³Detail in column one may not add to any meaningful total because businesses may report more than one of the indicated substances.⁴Less than 1,000 tons, however, the data are included in the appropriate totals.

NOTE: Detail may not add to total because of rounding.